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KEY CONCEPTS OF REAL ESTATE MARKET ANALYSIS AND VALUATION WITH SPECIFIC APPLICATION TO RESIDENTIAL APARTMENT INVESTMENTS

BY

RICHARD B. HUNTER, JR.

A REPORT PRESENTED TO THE GRADUATE COMMITTEE
OF THE DEPARTMENT OF CIVIL ENGINEERING IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ENGINEERING

UNIVERSITY OF FLORIDA

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Thesis
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To my loving wife

and the memory of our infant daughter

Whitney Lauren

Our joys will be greater

Our love will be deeper

Our life will be fuller

Because we shared your moment

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CHAPTER ONE
INTRODUCTION

With all of the variety of investments available to investors it is often difficult to evaluate the various aspects of the investment and determine whether the estimated return on the investment is worth the risk involved. Real estate investing, like any other, is a form of risk taking that must be related to the effort involved in managing the investment and expected earnings. It must be realized that there are no easy roads to economic success and no magic keys to open the doors to great fortunes. The purpose of this report is to examine some of the key aspects and principles involved in real estate investing that have proved to be of high value in determining the desirability of particular real estate investments.

The report examines some of the basic theory underlying real estate investments which are essential to placing real estate investing into perspective. These include the forces affecting the change in use and value of real estate, the unique characteristics associated with real estate, and some essential investment concepts including an analysis of associated risk. The report considers many of the tax considerations which have been essential to increasing the popularity of real estate investments. It analyzes the three most common methods of real estate valuation and provides and investment case study for an apartment building complex.

This report is not intended to be an all inclusive study of all principles and concepts, but is intended to

provide a basic understanding of essential real estate investment concepts.

CHAPTER TWO
BACKGROUND/GENERAL

2.1 Definition of Terms

In general, the law does not distinguish between land, real estate, and real property [Stewart, 1972]. When considering real estate for investment purposes, the defining of these terms is essential. In law, land includes the land itself and all items firmly attached thereto. When considering real estate appraisal and investment, land excludes buildings. Real estate encompasses the land and the buildings, if applicable. Real property addresses the rights to use the real estate and includes both the tangible and intangible benefits. Real estate has value associated with it only because of the property rights assigned to it.

Many times the terms value, price and cost are used interchangeably; it is, however, important for the investor to distinguish between the meaning of these terms. Value is the present or future worth of benefits derived (or to be derived) from the property. Price is the amount of money paid, asked for or offered in a sale. Price, therefore, expresses an individual estimate of value in terms of money. Price may be more or less than the value. It is only properly justified when the price equals the value for the individual investor. Cost is historical; it relates to a price that was paid in the past. What something cost in the past may have little bearing on its value or worth today [Crean, 1979].

Market value is another important definition and concept to understand regarding the valuation of real estate. The American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers, in their jointly sponsored text, Real Estate Appraisal Terminology, define market value as:

> The highest price in terms of money which a property will bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and the seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus.
>
> Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:
>
> 1. Buyer and seller are typically motivated.
>
> 2. Both parties are well informed or well advised, and each acting in what he considers his own best interest.
>
> 3. A reasonable time is allowed for exposure in the open market.
>
> 4. Payment is made in cash or its equivalent.
>
> 5. Financing, if any, is on terms generally available in the community at the specified date and typical for the property type in its locale.
>
> 6. The price represents a normal consideration for the property sold unaffected by special financing amounts and/or terms, services, fees, costs, or credits incurred in the transaction.

2.2 Investor Objectives

One of the most important decisions for the potential investor is selecting the appropriate goal or objective desired. Maximization of income or maximizing expected income streams might include attempts to maximize effective gross income, net operating income or taxable income. The drawback to selecting one of these objectives is that income

figures do not provide satisfactory feedback for interim results. Effective gross income, for example, does not consider the effects of operating expenses, financial expenses or taxes. Taxable income fails to account for depreciation. Therefore, cash flows are normally used to measure benefits between holding periods.

Measurement of investor objectives through use of cash flows, however, requires cautious use. Selection of an investment with a positive cash flow does not ensure the best investment alternative. Some investments with a beginning negative cash flow may turn out to provide the largest capital gain at the time of sale. This same logic also can be applied to objectives of minimizing tax liability.

The most prevalent objective for investors is achievement of a satisfactory rate of return. Utilization of a rate of return calculation requires combined consideration of proper operation, finance and taxation considerations. With the overall rate of return adopted as the primary objective in real estate investments, optimal decisions in each area of consideration will necessarily follow.

2.3 Forces Affecting Change in Use and Value

One of the essential characteristics of real estate is that each parcel is fixed in location. This aspect of real estate leads to the realization that the environment surrounding each parcel strongly influences its use and value. Knowledge of the forces in the environment that affect its use and value are primary to the investor's

success. The relative importance of these forces is many times difficult to determine, yet knowing about them is essential. In general, forces which influence the use and value of real estate can be divided into three categories: physical and biological forces; economic forces; and institutional forces [Ring, 1981]. This classification is convenient for purposes of discussion and analysis. In light of the considerable interaction between these forces on a continuous basis, their effects are many times more difficult to determine. Many times their effects may complement each other, offset each other, or some combination in between.

Physical and biological forces include the natural environment in which we live. They include natural resources such as the soil and water and raw materials such as minerals and fuels. They also include forces created by mankind and his demand for raw materials and real estate. The two primary factors which affect real estate are population distribution and growth and the relative abundance and availability of natural resources. Demography, or the study of population characteristics and patterns serves as the primary vehicle of physical and biological forces, economic forces, and institutional forces. These would include population trends such as marriage, birth, death and migration rates and patterns. The United States population was 76 million in 1900. By 1950 the population had nearly doubled and approached 152 million. By 1980, the population had more than tripled. A direct relationship exists between

population and real estate values. Because real estate represents a limited commodity, as population increases, so does the demand for real estate which, in turn, leads to higher values, other things being equal. Even with the increasing "zero population growth" attitude of many people which may lead to a more stable population, per capita income is likely to continue increasing which will tend to increase the demand for higher quality space. Population distribution also plays a key role in the demand for real estate and hence its value. In 1900, only 39.7 percent of the population lived in urban areas. In 1950, 64 percent lived in urban areas and in 1970, 73.5 percent. As of 1981, 75 percent of the United States population was estimated to live in urban areas [Ring, 1981]. In regional terms, the population has been shifting toward the west since 1900, and more recently has included the south Atlantic states as a result of people following the sun for economic opportunities as well as life style.

Economics has been defined as the allocation of limited resources to satisfy human needs and wants. Real estate prices and values are directly influenced by the pace of economic activities. While economic forces can not be measured directly, there are measures of economic activity which can be observed. The most common at the national level are the gross national product, personal income per capita, the consumer price index, and employment and unemployment statistics. A more detailed breakdown of the economic forces affecting the value of real estate would include: income of the property, the earning power of the community, prevailing

terms and availability of mortgage credit, market activity, price levels, tax burdens, trends in real estate development and employment, and general business conditions at the local, state and national levels.

The final category, institutional forces, includes social and political forces, and are generated through the acceptance of certain principles, laws or beliefs. Social forces to be considered would include: neighborhood character, family size and composition trends, urban renewal efforts, civic attitudes and attitudes toward architectural design and utility. Political forces and laws are the most significant forces influencing the use of real estate. The government at the national and state levels influences real estate values through price and rent controls, credit controls, government-sponsored housing and loan programs, and monetary and fiscal policy. At the local government level, civic services, police and fire protection, school systems, and public recreational facilities influence real estate property values. Legal forces would include such factors as condition of title, easements, deed restrictions, liens, zoning codes, building codes, city planning ordinances and environmental legislation [Crean, 1979].

CHAPTER THREE
REAL ESTATE MARKET CHARACTERISTICS

The purpose of this chapter is to study the unique characteristics of real estate when compared to other types of investments such as stocks, bonds, or gold, for example. There are some particular and unique advantages offered by real estate as well as limitations and disadvantages. In addition, there are particular conditions necessary for the successful investment to realize the advantages offered.

3.1 Unique Characteristics

Of all the variety of characteristics of investments, the most unique and influential factor, attributable to real estate, is the immobility of the investment [Ferguson, 1982]. The fact that land is fixed provides some not so obvious effects. Most of the characteristics discussed originate in the fact that real estate is a fixed location investment. When there is no market for the resale of other tangible or intangible property, such as stocks, bonds or gold, the property can be sold elsewhere. However, unless referring to the sale of shares of ownership by a corporation or syndicate, there is little mobility in the ownership interests in real estate. The real estate is therefore generally a captive of the local economy and environment as well as changes at the regional and national levels.

The use to which a particular parcel of real estate is put affects surrounding property and is, in turn, affected by the nearby improvements. The value of a property and its

appreciation potential are greatly affected by nearby real estate uses. It is therefore critical that adjacent incompatible or undesirable land use must be avoided. It also highlights the greater risk attributable to land or realty purchased in areas without strict land use controls. Investors generally desire those investments located in areas protected by strict legislation that controls the use of land, despite the fact that unrestricted areas may offer a chance for greater future profitability.

Realty has both an economic and a physical life. The economic life of an investment ends when the return from the use of the parcel of land including any appreciation is less than the cost of use. The land itself is indestructible and the improvements may have a physical life far in excess of its economic life. An example of this can be observed in blighted areas of many of our cities where the cost of rehabilitation can not be recovered by rental increases. In these cases the value of the land may be more without the improvement; and the investments may logically (economically speaking) be abandoned.

Real estate in general lacks liquidity. Even if a willing buyer can be found immediately, the normal time necessary to complete the transaction is seldom less than a month and in many cases three months or longer. This delay is many times attributable to a mortgage lender's desire for information about the property and the buyer, or for title searches or the recording of deeds. Even if the purchase is

for cash, some delay in the pursuit of these security measures is normal practice.

Compared to many other investments, real estate has a relatively high unit cost. Nearly all pieces of real estate on the market today will cost thousands of dollars. Most purchasers can not afford to purchase realty without the assistance of mortgage lenders. This consideration does not include those purchasers who pool their money with other investors through real estate investment trusts. It is for these reasons that the availability of mortgage loans and their interest rates directly affect the liquidity of and the value of real estate investments.

Unlike many other types of investments, ownership of realty requires continual management and attention. When considering the management of apartment complexes, tenants, maintenance, health or sanitation laws all require attention. One can employ other individuals to manage the investment, but even this will require conferences to establish guidelines and policies about rental schedules, evictions, suppliers, etc.

Almost all public expenditures on roads, schools, parks and other capital improvements ultimately benefit some real estate investors. Property owners share in the benefits being provided the general public as a whole. In most instances the investor is paying only a fraction of the cost through increased property taxes and other charges. More than any other possible investment, land and buildings appreciate because of local, state or federal government

improvements. This appreciation many times is an unexpected bonus that increases the return on the property. It is because of the effect of this factor by local governments that the market for investments tends to remain localized by those who are in the best position to know and understand local concerns, anticipated growth, local projects, etc.

3.2 Advantages of Real Estate Investment

There are a number of advantages to real estate investment not found to the same extent in other types of investments. It is also important to realize that the advantages discussed may not apply to every purchase or to the same degree for different property considerations. In addition, individual credit standings, sources of financing, tax factors and other income available to each investor will be different.

The ability to leverage with real estate, allows an investor to control higher priced properties than is normally possible with other types of investments. This is arranged through the availability of mortgage funds to help finance the purchase of real estate with a relatively small down payment with the repayment scheduled over a long period of time. Leverage can also increase the return realized on the property as long as the property provides enough income to pay all operating costs and the mortgage payments.

A second advantage is the shelter that investment properties offer from federal income tax. This is possible

because both interest and depreciation are deductible from the net income (gross income minus operating expenses) before computing the tax liability. This is known as a property shelter. Although interest is an out-of-pocket expense that reduces spendable income, depreciation is not.

An income shelter exists when the investment returns income, but the depreciation and interest deductions combine to cause a loss for tax purposes. If the investor is in the 50 percent tax bracket, then over half of the "loss" represents savings in taxes he would had to have paid on other income. Current tax law allows the "loss" to be deducted from other income before tax liability is computed.

Another advantage not readily apparent is that the depreciation allowance is based on the cost of the entire building, not just the part that represents the investor's equity. Thus, by using borrowed money to buy higher valued realty, an investor can increase the available depreciation allowance, adding to the leverage.

Investors have always sought investments that offer income or growth equal to or greater than the inflation rate. Because inflation represents a loss in purchasing power, investors tend to shy away from long term investments with a fixed income that will result in actual loss of purchasing power. The result has been a preference for short-term, high yield investments that allow owners to reinvest at current market rates. When appreciation in value is added to after-tax income from real estate investments, the overall return, in general, has kept up with or exceeded the inflation rate.

Beginning in 1980, real estate investments have seen slightly lower returns, but they have done better than most long-term investments and as well as many short-term ones, especially considering the after-tax return [Ferguson, 1982]. The advantages of appreciation are two-fold. The first is the realization of the effect of leverage; in most cases the investor realizes the appreciation gained on the entire value of the real estate, not just that on his equity. Second, appreciation has the advantage over income in that it is taxed at the lower capital gains rate. In fact, it is not taxed at all until the property is sold. In addition, appreciation in a property can be realized without having to sell the property outright for cash. The advantage of this is that the capital gains taxes can be deferred almost indefinitely by refinancing or trading the property.

Real estate values and prices have exhibited few of the fluctuations of other investments. Even during recessionary periods in which investor confidence in stocks and other securities fell, they have exhibited constant growth [Ferguson, 1982].

Finally, real estate offers an alternative to either trading or selling the property. Part of the increased equity can be sold to partners. Real estate can be divided into many interests with each interest sold or rented to others. This added degree of flexibility offers alternatives to creating income or cash as the need arises.

CHAPTER FOUR
ESSENTIAL INVESTMENT CONCEPTS

4.1 Investment Characteristics

In general, an investment can be defined as a commitment or outlay of financial capital for the purpose of earning a financial return commensurate with the risks associated with the investment during the investment period. The motivation or purpose for investment is to provide for possible future consumption. A wide variety of investment opportunities are available to individual investors in our economy. A possible outline of investment alternatives might be as follows [Messner, 1975, p. 13-14]:

I. Direct Investment Alternatives

A. Fixed-principal investments

1. Cash
2. Savings Accounts
3. Marketable savings certificates
4. Corporate bonds
5. Government bonds

B. Variable-principal securities

1. Preferred stocks
2. Common stocks
3. Convertible securities
4. Warrants
5. Options

C. Non-security investments

1. Real Estate
2. Mortgages
3. Commodities
4. Business ventures
5. Art, antiques, and other valuables

II. Indirect Investment Alternatives

A. Pension funds

B. Insurance company portfolios

C. Investment companies

D. Trust funds

This list is not intended to be all-inclusive. This list is offered to indicate the wide variety of investment possibilities. Each item in the list can be further subdivided into finer details. To further emphasize the diversity of investment possibilities and to place the investment opportunities in apartment complexes into perspective, the following outline further details the concept of income-producing real estate investment opportunities [Messner, 1975, p. 20-21]:

I. Residential Income

A. Apartment houses

1. Garden
2. High-rise

B. Hotels

C. Motels

D. Rest homes

E. Single-family and condominium rentals

II. Commercial

A. Professional buildings

B. Office buildings

C. Shopping centers

1. Local
2. Community
3. Regional

D. Single-purpose buildings
1. Theaters
2. Bowling Alleys
3. Free-standing retail stores
4. Service stations

III. Industrial

A. Warehouses

B. Industrial parks

C. Manufacturing facilities

D. Utility-company buildings

IV. Institutional

A. Hospitals

B. Government office buildings

C. Churches

D. Schools

V. Farms and land

A. Recreational land

B. Subdivision land

C. Residential multi-unit land

D. Commercially zoned land

E. Industrially zoned land

F. Raw acreage

G. Farms

H. Ranches

Even this list could be further expanded to provide yet more detail of the investment type. Just as there are a myriad of types of investments, so are there a myriad of types of investors. Different investors will have different needs and desires regarding the types of investments they make. It follows therefore that the basic investment characteristics must be matched with the basic investor objectives. The following paragraphs provide a number of the

basic objectives considered by investors in individual investment analyses.

Safety, or safety of income, can be viewed as the opposite of risk. Certainty is a measure of that safety, whereas uncertainty is a measure of the risk associated with a particular projected income stream. The degree of certainty that an investment will continue to provide a periodic income stream can be measured in terms of the income quantity, quality and durability.

The quantity of income to be expected from an investment is a function of the marketplace. For a real estate investment, this will be based on past and present performance of the particular property, rentals earned by this and comparable properties, and a projection of what rent current and prospective tenants are willing to pay.

The quality of rental income is a function of the type of tenant paying rent and/or the type of business in which the tenant is involved. Income generated by a highly dependable tenant or one operating a viable and competitive business is likely to provide a constant and dependable income stream.

The durability of income is defined by the length of time over which the projected quantity of income may reasonably be expected to last. Durability of income can be improved by a long term and well written lease.

Generally speaking, real estate investments provide a relatively good safety of income. This is due primarily to the long economic life and permanence of real estate, as well

as the common ability to convert the use of buildings from one type of income generator to another. In general, current income provided on many types of real estate investments are quite comparable to other types of investment alternatives.

All investors rate quite high the importance that the initial capital investment will be returned. Over the years, in general, real estate has been a safe place to invest capital, because of the long life, durability of the product, and the appreciation realized in a generally inflationary economy. Because of the stability of the United States political system compared to others around the world, many foreign investors are purchasing real estate assets in the United States to protect their capital.

The initial quantity of capital required for an investment many times determines whether or not a particular investor may consider participation. Investments requiring a large initial capital outlay may often limit or exclude the small investor. In general, real estate investments normally require a relatively large initial capital outlay. Even considering high ratio mortgage financing, down payments are still measured in thousands and tens of thousands of dollars [Crean, 1979]. The small investor does have the opportunity to buy into a real estate investment trust (REIT), which allows him to be part owner of the real estate investments, but this is not the same as owning real estate as a whole.

Turnover of capital is a measure of the time for investment income to return the total amount of capital

invested. In general, real estate investments have a very slow turnover of capital. Real estate investments may be held five or ten years before being resold or before gross income is equal to the invested capital.

The liquidity of capital is a measure of how quickly an investment can be converted into cash without the investor suffering a loss. The quicker an investment can be converted into cash without a loss, the greater is its liquidity. Liquidity is an important and highly desirable investment characteristic. The lack of liquidity in real estate is perhaps the single greatest disadvantage of real estate investments. Nonliquidity is often referred to as the Achilles' heel of real estate investment [Crean, 1979].

The marketability or transferability of capital is a measure of how quickly an investment can be converted into cash regardless of loss. The difference between liquidity and marketability is simply a function of the sales price of the commodity. Since real estate is most often sold in a local market and because of the individual uniqueness of real estate, it is usually considered to be not highly marketable relative to other types of investments. Some types of real estate are, of course, more marketable than others. These types usually are associated with a broad market, or one in which there are many buyers and sellers in the market at the same time. Primary single-family dwellings normally will fall into this category, other things being equal. Less marketable real estate, or one associated with a thin market,

might include special or single-purpose properties such as theaters or bowling alleys.

Appreciation of capital represents an increase in the value of an investment. This can be realized either by the dollar value or the real value of the investment increasing. An increase in the dollar value of the investment may occur simply as a function of inflation. The real value increase is a true increase in the value of the commodity or in addition to that provided by inflation. During recent decades, real estate investments have shown remarkable increases in value because of a variety of factors. These factors include: population growth; construction cost inflation; average increased income of the typical American family; highway growth; suburban industrial growth; urban renewal; and increased education and public awareness.

Appreciation in the value of an investment is normally not realized until the investment is sold. With real estate investments, however, the appreciation can be utilized without having to sell the investment. A common practice used by real estate investors whose property has appreciated is to refinance the property based on the increased property value. The cash difference between the new loan and the old loan (which is either paid off or wrapped around) can be utilized by the investor and is not subject to taxation until the property is sold.

CHAPTER FIVE
MARKET ANALYSIS

5.1 Risk

Real estate is an extremely complex commodity when compared to other investments [Jaffe, 1982]. This is due to a number of factors and characteristics inherent in real estate, but most importantly are the myriad of forces which affect the return and risk of an investment. One of the key factors in analyzing a potential investment in real estate is to forecast the expected cash flows. There are a myriad of factors which may affect the anticipated cash flows including: economic characteristics of the marketplace; characteristics of the legal and sociopolitical environments; physical qualities of the investment; and demographic changes to name a few. At the heart of these considerations is the risk or uncertainty involved in the investor's ability to accurately predict the future effects of these factors on the investment. Risk in this case can be defined as the variation in the expected cash flows. The purpose of this chapter is to analyze those factors that influence risk and therefore the value on which the investment decision is made.

Of the market forces examined in this chapter, the most critical influence is that of supply and demand forces which primarily govern real estate values and therefore prices. The goal of every investor need be to reduce the business risk associated with the investment or the probability that the investment will not generate as much net income from operation and reversion as expected.

The investor must examine the factors which influence cash flows and formulate expectations based on them. The identification of these factors and their anticipated effect is critical to the success of the investment. Failure to identify significant factors or to not anticipate the magnitude or the effect on the investment can result in substantial costs and possible project failure. The critical elements from the market study include the amount and the certainty of gross income, operating expenses, and the resultant net income over some future period of time. The principal thrust of the market study must include a current and projected evaluation of supply and demand. This is perhaps the most neglected area of real estate theory and practice [Jaffe, 1982]. A detailed analysis of existing facilities and the potential for new facilities within the affected area of the proposed investment are the basic foundation to estimate rent, vacancy rates, expenses, and future trends of the property value.

The purpose of the market analysis is simply to reduce the risk associated with the investment. One of the major risks is the business risk. This can be defined as the risk related to the general conditions of the economy, the type of investment group, and the local area where the real estate is located. Business risk includes such factors as: economic trends such as unemployment or recession; economic or functional obsolescence of the investment; flood, fire, or other disasters; local zoning changes; etc. These risks can

be classified under one of the following areas for convenience of discussion: market changes, inflation, interest rate movements, liquidity, legal risks, changes in political climate, and natural hazards. Many of these risks overlap but are sufficiently different so that each should be considered separately. All investments may be influenced by all of the categories discussed, to some extent, however, some types of investments may be more susceptible to a certain type of risk than others.

Market changes which affect the levels of supply and demand for the type of investment, commodity or service offered poses a risk to the real estate investment [Barrett, 1982]. This might include changed conditions of a neighborhood, changed traffic patterns, or the development of a new competitor and will affect the profitability of the investment.

In general, the effects of inflation can have devastating implications for the investor. Real estate, however, is normally considered to be a good hedge against inflation, as are other physical, valuable and durable goods.

Real estate values are normally affected by fluctuations in interest rates. This is primarily due to the influence of interest rates on the capitalization rates used in determining appraised values. For example, an increase in interest rates will tend to increase capitalization rates (the rate at which an investor's capital is returned to him). Thus in the formula where the value of the investment is equal to the net operating income divided by the

capitalization rate, an increase in the capitalization rate will represent a decrease of the appraised value of the property. This will eventually affect the price that the property attracts in the market place.

The lack of liquidity attributable to real estate highlights the risk associated with it in the event that cash is required from the investment on short notice. Because of real estates' immobility and therefore fixed market the property may have to be sold at a reduced price.

A real estate investment can include risks not found in other types of investments. These include possible prior claims of title against the property, mortgages, notes, easements, taxes, building codes, environmental restrictions, tenant actions, and liability claims. While there are various types of insurance available to guard against these risks, the insurance itself represents a separate risk area.

Possible changes in legislation represent risk to the investor, whether it be a change to the local building codes or zoning ordinances or a change in the method of taxation at the federal level.

Natural hazards are peculiar to most types of real estate investment. The value of potential damage from "Acts of God" should be calculated and insured against. The potential for particular types of disasters for the location of the real estate must be considered.

CHAPTER SIX
VITAL TAX FACTORS

6.1 Income Tax Advantages

Many different types of investments have income tax benefit characteristics and many investors make income tax shelter one of their primary objectives. Tax shelter is often the most attractive and the most important objective of many real estate considerations. Many investments when analyzed on a before-tax basis which may appear marginal at best, appear quite attractive when analyzed on an after-tax basis especially to investors in a high tax bracket with income from other sources.

The tax advantages are provided for by congress through the federal laws known as the Internal Revenue Code. This code is many times aimed at encouraging certain types of economic activity within our system. The power of Congress to change the tax laws overnight was not specifically addressed in Chapter Five on risk. It is apparent to anyone who follows the current activities of Congress that major tax law modification is probably not too far into the future. The final outcome of the new law is not known, but there appears to be significant modification regarding real estate investments pending. For this reason it is considered wise investment strategy to ensure that a potential real estate investment property can stand on its own without the benefits of current tax law [Ferguson, 1982].

Tax law advantages may be useful then not in determining a potential investments viability but in enhancing the

attractiveness of the anticipated return. There are a number of ways in which current tax law benefits investors.

First, the tax law permits the deduction of certain cash outlays or expenditures such as operating expenses, property taxes, and mortgage interest. This will reduce the investor's tax liability thereby lowering the effective yearly costs of the investment. For example, for an investor in the 50 percent tax bracket the payment of the tax-deductible costs listed above are reduced by one half of these payments.

Second, the law allows the deduction of depreciation of the real estate improvements thereby reducing otherwise taxable investment income and providing tax shelter to this income. Depreciation is a noncash expenditure hence it does not result in the actual reduction of cash flow. For example, assuming the same investor in the 50 percent tax bracket, if the property produces $400,000 of income and $100,000 of depreciation is allowed, taxable income is reduced to $300,000. This causes $100,000 of the income to be sheltered with a tax savings of $50,000 or one half the tax shelter.

Third, where the tax deductibility of items including depreciation exceeds the income produced by the property, the amount in excess of the income may be used to shelter income from other sources. Hence, in the above example, if operating expenses and mortgage interest amounted to $350,000, the tax loss of $50,000 ($400,000 - $450,000) would

result in a tax shelter of other income up to $50,000 and an additional tax savings of $25,000 or one half the shelter.

Fourth, by owning many properties through the leverage of equity capital (discussed earlier), real estate investors can multiply their tax shelters available from depreciation, since the total investment (exclusive of land), not just the investor's equity in the property, is depreciable [Crean, 1979].

Finally, the tax law allows the deferment of taxes due on current income to some future time. For example, the depreciation deducted in the example above will be taxed at the time of resale of the property. The advantages of tax deferment may be realized in one of two ways. First, the investor realizes the time value of money created by not paying the taxes due over the economic life of the property until resale. If the investor is still in the 50 percent tax bracket (which he may not be if the property is sold after retirement, for example) the tax due will be the same amount as that realized in the earlier years but the value of the money is less due to the time value of money. Second, for the amount of depreciation not in excess of that allowed by the straight line method of depreciation, the gain is realized at the lower capital gains rate.

6.2 Depreciation

As previously stated, depreciation is a noncash expense; it lowers taxable income without lowering cash flow. The amount of depreciation allowed in any one year is a function

of the adjusted basis, the useful life of the property, the method of depreciation, and the salvage value.

The Internal Revenue Service (IRS) regulations define useful life as the period over which an asset may reasonably be expected to be useful to the taxpayer in his trade or business or in the production of income. This is also referred to as the "cost recovery period" in tax law. The IRS also issues useful life guidelines for various classes of assets. Currently an investor may choose one of two methods to depreciate the improvement. These are either the straight line method or an accelerated method that combines 175 percent declining balance with straight line. The method chosen will determine the number of years over which the improvements may be depreciated or the property's useful life. The choice of period is not affected by whether the property is new or used, nor by the actual physical condition. It is affected by whether the owner wants large expense deductions over a short period of time or smaller deductions over a longer period of time [Ferguson, 1982].

6.3 Capital Gains

Capital gains income results from the sale or exchange of capital assets as defined by the tax code. In addition to an individual's personal residence, real estate is classified as follows.

Property held for sale to customers is not considered a capital asset. Interest and expenses may be deducted but

depreciation may not. It may not be used for a tax-deferred exchange and gains and losses are treated as ordinary income.

Property held for investment is considered a capital asset. The owner may deduct interest and expenses and may use it in a tax-deferred exchange, but he may not deduct depreciation.

Property held for use in a trade or business and property held for the production of income is considered a Section 1231 asset. Interest, expenses and depreciation may be deducted and the property may be used in a tax-deferred exchange. Gains are treated as a capital gain and losses are treated as an ordinary loss.

In general then, unless real estate has been bought for subdivision or development, it is generally given the more favorable capital gains tax treatment when it is sold. This also requires that the real estate be held in excess of six months beginning in June 1984. Any net profit over the basis is taxed at a lower rate than the investor's marginal income tax rate. Because 60 percent of the gain is excluded, the effective rate is greatly reduced. For example, the effective long term capital gains tax rate for someone in the marginal 50 percent tax bracket would be 20 percent of the total gain (50 percent marginal rate x 40 percent of the gain).

The capital gains is calculated by taking the sales price and subtracting: the depreciated value of the building or improvements, the cost allocated to the land, the closing costs on the loan, unamortized prepaid expenses and

prepayment penalty, depreciation recapture, selling expenses and the capital outlay at the sale. The depreciated value of the building is calculated as the original cost allocation of the building plus any capital outlays and the value of any personal property acquired with the building minus all depreciation taken at the time of sale. The cost allocation to land includes that part of the purchase price allocated to the land plus landscaping outlays. Closing costs include all fees paid by the investor at the time of purchase except for loan service fees and prepaid expenses. Unamortized prepaid expenses would include any expenses to have been amortized over the life of the investment but not yet taken. Depreciation recapture is subtracted because it is taxed at the ordinary income tax rate not at the capital gains rate. Selling expenses include broker's commission, preparation of the deed fees, seller's tax and other miscellaneous items. Capital outlays made as a condition of sale are also deducted. The capital gains amount would then be multiplied by 40 percent and by the investor's marginal tax rate to compute the gains tax owed.

6.4 Income Tax Rates

Tax rates and brackets are an important consideration and require further clarification. For simplicity of calculations, use of a 50 percent tax rate is common in investment calculations. A potential investor should determine the investment value of the property on an after-tax basis based on the individual's actual tax position.

Furthermore, when discussing this matter, it is important to distinguish between one's marginal tax bracket, effective tax rate and effective marginal tax rate.

An investor's marginal tax bracket is the rate paid on the last dollar earned. For example, a married taxpayer filing jointly for a 1985 income of $40,000 is in the 33 percent marginal tax bracket, refer Appendix A. Hence, the last dollar of income will increase the tax owed at a rate of $.33 per dollar earned.

The effective tax rate of this person's total income is not, however, 33 percent. Adding $6528.40 to 33 percent of $3370.00 (the amount earned over $36,630.00) which is $1112.10 yields a total tax of $7640.50. This yields an effective tax rate of 19.1 percent on $40,000 taxable income.

Now assume that this investor is entitled to a $10,000 tax deduction due to the tax shelter of a real estate investment. Consulting the table at Appendix A reveals a tax due of $4705.60 on a taxable income of $30,000. The difference between the taxes owed at $40,000 income ($7640.50) and at $30,000 ($4705.60) is $2934.90. Hence the investor's effective marginal rate for a $10,000 tax deduction would be 29.3 percent.

6.5 Basis

Another important concept to understand is the tax basis of a property. Basis is the original cost of acquiring property or the original value of the property upon acquisition. The method of determining the basis depends

upon how ownership in the property was derived whether by purchase, exchange, inheritance, as a gift, etc. Basis is the essential input for the determination of the gain or loss upon the sale or exchange of the property. It is also essential in determining the amount of depreciation deductions allowed by the IRS.

The three basic acceptable methods of determining basis are the following [Crean, 1979]:

1. The property tax assessor's ratio of land to improvements multiplied by the purchase price or value of the property,

2. The price of value or allocation stated in a sales or exchange contract between a buyer and a seller in a so-called arm's length transaction, where each is dealing from equal bargaining positions, or

3. The price or value allocation as determined by a competent real estate appraiser.

The basis may increase or decrease over time after acquisition. The result of these changes is called adjusted basis. The adjusted basis is the figure used in calculating the gain or loss upon sale or exchange of the property and in calculating depreciation. Allowable additions to the basis include capital improvements and capitalized carrying costs. Reductions to the basis most commonly include depreciation, casualty loss, sale of an easement, and partial divestiture of property by a taking because of condemnation by the power of eminent domain.

6.6 Depreciation Methods

Once the basis and useful life have been determined, a method of depreciation must be elected by the investor. In addition, the price estimated to be received upon the building sale at the end of its useful life, or salvage value, must be determined. The salvage value of the improvements is not depreciable and therefore must be accounted for in each of the depreciation methods. The straight-line method of depreciation account for the salvage value by requiring that the salvage value be subtracted from the basis before allocating the basis over the useful life of the property. The accelerated declining balance method ignores the salvage value in the calculation of each year's depreciation, however, salvage value is accounted for in that this method will not permit the declining basis to fall below the salvage value.

In the straight-line method of depreciation, the depreciable basis, less the salvage value, is divided by the useful life of the property to obtain the annual depreciation deduction. As an alternative, the straight-line rate of depreciation can be calculated by dividing 100 percent by the useful life of the property. This rate is then multiplied by the depreciable basis less salvage value to determine the annual depreciation deduction.

The calculation of the straight-line rate is also used in the 175 percent declining balance calculation authorized by the IRS. The accelerated method of depreciation allows the taxpayer to take depreciation deductions that are larger

than those allowed by the straight-line method in the early years of ownership. Since the total amount of depreciation is the same under either method, larger amounts in the early years means smaller deductions in the later years. At this point the investor may elect to shift to the straight-line for the remaining useful life. The 175 percent declining balance calculation involves multiplying the straight-line rate by 175 percent to obtain an accelerated rate of depreciation. This rate is multiplied, ignoring salvage value, by the property basis. The property basis balance is reduced each year by the prior year's depreciation.

6.7 Excessive Depreciation

Any depreciation taken which is in excess of the accelerated method approved by the IRS is considered excessive depreciation, and requires the reduction of the property's undepreciated basis for future years. Excessive depreciation requires a reduction of the basis to the extent of the actual tax savings realized. For example, if an investor had deducted an additional $5,000 depreciation more than allowed (perhaps due to choice of an unwarranted method or the use of an unsupportable economic life discovered during a subsequent audit) and the investor has an effective marginal tax rate of 50 percent, the basis would be reduced by $2,500 which were saved in income tax due [Sieg, 1979].

6.8 Recapture of Accelerated Depreciation

Accelerated or excess depreciation is defined as any depreciation allowed by the IRS but above the amount allowed by the straight-line method of depreciation. The excess depreciation is added to other income during the year of sale and taxed at the investor's marginal tax rate. To be authorized by the IRS, residential property must have 80 percent of its rental income from the lease of units to be occupied by tenants as housing.

CHAPTER SEVEN
REAL ESTATE VALUATION

7.1 The Cost Approach

The cost approach utilizes the physical data of the site and improvements. It quite simply consists of adding the site value to the depreciated reproduction cost of the building improvements. It is particularly applicable in the following situations: 1) when there is no competitive market for the subject property; 2) when the subject property is truly unique, one-of-a-kind, or is a special purpose property such as a museum; 3) when the improvements are very new or proposed; and 4) when the property produces no income such as a church or school.

There are five separate steps to be followed in determining the value of real estate by the cost approach. First the vacant site value must be determined at its highest and best use. Second, the new reproduction cost of the building must be determined. This can be accomplished through a number of methods including: doing a complete itemized inventory of prices for all materials, equipment, labor, overhead and profit; estimating the costs of the structure in unit measurements such as linear feet of finished drywall; estimating the costs by building trade breakdown such as excavation, foundation, framing, etc.; and using the comparative unit method which utilizes a standard cost per square or cubic foot. Third, all accrued depreciation must be estimated. The accrued depreciation is then subtracted from the new reproduction cost. And finally,

the site value is then added to the depreciated cost of the building improvements to yield the total property value.

It is important at this point to distinguish between reproduction cost and replacement cost. Reproduction cost is the cost associated with constructing an exact duplicate or replica using the same materials, construction standards, and quality of workmanship of the existing facility at current prices. Replacement cost is the cost of construction at current prices of a building with the same utility as the subject building but built with modern materials and according to the current standards, design and layout. Appraisers tend to use the reproduction cost rather than the replacement cost estimate because the replacement cost by definition does not include functional obsolescence existing in the subject building. One exception would be if the investor were choosing between the existing improvements or building new facilities. Replacement cost would also be utilized in determining the feasibility of rehabilitation, modernization or remodeling [Boyce, 1975].

One of the most difficult steps in utilizing the cost approach is estimating the accrued depreciation or diminished utility of the improvements. Accrued depreciation consists of three basic elements: physical deterioration, functional obsolescence, and economic obsolescence.

Physical deterioration is evidenced by the wear and tear, decay, dry rot, cracks or structural defects. Physical deterioration can be further divided into curable and

incurable types. Curable physical deterioration is physical diminished utility, the cure of which costs no more than the value of utility expected to be added to the real estate by the cure. Incurable physical deterioration is physical diminished utility which is not economically justified to be corrected. The cost to cure is more than the value anticipated to be added to the value of the real estate by the cure.

Functional obsolescence is the loss of value arising from the decreased utility, inadequacy, or change in taste in architectural style or design. As with physical deterioration, functional obsolescence can be divided into curable and incurable depending on the increase in value anticipated to be achieved by implementing the cure.

Economic obsolescence or locational diminished utility is a reduction in the utility of the real estate as a result of negative environmental forces outside the property. Examples include: change in the character of the neighborhood, presence of a nuisance, changes in zoning, lack of public transportation, etc. Because these forces are external and normally beyond the control of the owner, they are normally considered to be incurable.

There are five basic methods commonly used to estimate the amount of accrued depreciation: capitalized income method, market method, straight-line method, engineering method and the breakdown method [Crean, 1979].

The capitalized income method is similar to the income approach to value. Depreciation is measured by its effect in

the reduction of amount and duration of the net income stream to be realized over the economic life of the investment.

The market method is similar to the market comparison method of valuation. It considers the difference in selling prices of two properties which are reasonably alike except for age. These differences which can be expressed as a percentage of value associated with age can then be applied in estimating the depreciation in other properties.

The straight-line method of depreciation assumes a constant percentage of the improvements value is deducted for each year of the structure's age. This percentage is subtracted from the reproduction cost based on age alone and does not consider individual variations which may exist in a particular facility.

The engineering method provides for reductions based on decrease of utility to be applied to the individual components of the structure, e.g. the foundations, walls, floors, etc. The primary shortcoming of this method is that it does not account for depreciation due to obsolescence.

The breakdown method is a further refinement of the engineering method. Not only are the individual construction components of the facility analyzed for deterioration, but for all three basic elements of depreciation: physical deterioration, functional obsolescence, and economic obsolescence.

Consider, for example, the valuation of a property such as a school for which there does not exist comparable sales

for purpose of comparison and, of course, the property does not produce any income. Assume that the building is twenty years old and in generally good condition. First, the value of the site must be determined. This can be calculated through the highest and best use calculation or by market comparison. Since the property does not produce income in its current use, assume that the highest and best use is that of a school and that the value of the site has be determined through market comparison at $120,000. The cost per square foot of the building new can be determined from estimating guides or from local builders. Assume that the cost new is determined to be $50.00 per square foot and therefore the cost new of the 20,000 square foot building is $1,000,000. Next the accrued depreciation must be determined. Under the category of physical deterioration this includes repainting required valued at $15,000; replacement of vinyl asbestos floor tiles valued at $5,000; and incurable structural decay estimated at 1 percent per year. These "penalties" are subtracted from the value of cost new for the building, refer Figure 7.1. Functional obsolescence of the building includes installation of new chalkboards valued at $4,000; construction of a new audio-visual projection room valued at $40,000; and an inefficient resistance heating system which costs an additional $8,000 per year in energy costs (and is considered incurable in that replacement is cost prohibitive). The total cost at 8 percent for 15 years (the remaining life of the heating system) is $68,470 (8.559 X $8,000). Because of the change in the

Figure 7.1 Valuation of School Property by the Cost Approach

Cost new for building		$1,000,000
Less accrued depreciation		
Physical deterioration:		
Curable		
Repainting	$15,000	
Floor tiles	5,000	
Incurable		
Structural decay at 1 percent per year for 20 years X cost new less physical curable already charged	196,000	214,000
Functional Obsolescence:		
Curable		
Chalkboards	$ 4,000	
Projection Room	40,000	
Incurable		
Heating system	68,470	112,470
Locational Obsolescence		$80,000
Value of Building		$593,530
Value of Site		120,000
Value of property		$713,530

growth pattern of the city, the school children are having to be transported additional distances at an estimated additional cost of $80,000 over the remaining life of the building.

7.2 The Market Approach

The market approach is based on an analysis of the typical buyers and sellers in the market place regarding the subject property. The appraiser attempts to find out what similar properties have recently sold for under the same market conditions. The appraiser must be sure that the comparable sales met the following requirements. There was no undue pressure on either the buyer or the seller. The buyer and seller were well informed. The parties acted with rational and prudent behavior based on market information. The comparable properties were exposed to the market for a reasonable length of time. The prices paid for the comparables reflected current market terms and conditions.

The basic principle underlying the market approach is the principle of substitution. The principle of substitution states that a property is not worth any more than the cost of a comparable property with the same utility and desirability, assuming that the other property can be obtained in the market place without any undue delay. In other words, the rational buyer will not buy a particular property is he can buy another property equally suitable for a lower price.

The substitution principle is utilized in the selection of comparable properties after the subject property is

analyzed for amenities, location, etc. Then a comparison is made between the the subject property and the comparable properties as to time of sale, location, utility, physical characteristics, conditions of sale, income-expense ratios, rental rates and other pertinent characteristics. The next step is to develop a list of adjustments to be made to the comparable properties where their characteristics differ from those of the subject property. It is a method to determine what the comparable properties would have sold for had they possessed the same physical and economic characteristics of the subject property. Finally, after making the adjustments, the sales prices of the comparable properties, should all fall around one central figure which will provide an indication of the market value of the subject property.

The appraiser should focus the analysis on the local market in which the subject property exists. Area and neighborhood analyses are useful in defining the local market. A larger area may be more useful than a smaller one as long as the characteristics between properties do not vary substantially and as long as the larger area includes reasonably comparable properties.

The appraiser should also focus his efforts on the current market data. Sales made very near the date of the analysis should be given the greatest weight. Sales which date back over a long period of time will include data from different periods of economic activity. Time period

adjustments are the most difficult to substantiate and may detract from the accuracy of the analysis.

Market standards must be used for comparing the sales of similar properties with the subject property. This requires substantial quantities of good market data, experience and judgment. The appraiser must analyze data to determine the degree of comparableness that exists between the subject property and each of the comparables. By first analyzing the subject property, the appraiser must identify the important characteristics of comparison. The comparisons must be made in terms of the characteristics of both the subject and the comparable properties and should include the following items [Kahn, 1963]:

1. Financial terms of sale
2. Conditions of sale
3. Date of sale
4. Character of tenancy
5. Style and layout
6. Size, rooms, functional adequacy
7. Structural type and quality
8. Improvements and accessory buildings
9. Income-expense ratio
10. Gross and net rentals
11. Condition of mechanical equipment
12. Functional utility
13. Age of buildings
14. Size, shape and location of plot
15. Zoning

16. Neighborhood changes during period studied

17. Sale-included other assets, such as furniture or fixtures

Units of comparison can be used to account for differences in size between the subject and comparable properties. A closer and more accurate comparison can be realized by reducing the property characteristics to a per-unit basis. This method of analysis should only be used when the differences are small to ensure that one is not attempting to compare properties which in reality are in different markets. For residential property appraisal, appropriate units of comparison might include: price per square foot of living area, price per square foot of ground area covered, price per apartment, price per room, etc. [Kinnard, 1968].

In the adjustment process the appraiser must adjust each of the comparable properties to an estimate of what the property would have sold for had it possessed all the important characteristics of the subject property. All adjustments are made from the comparable property to the subject property. For example, if the comparable property has some additional improvement which the subject property does not have, then a downward adjustment is made in the sales price of the comparable property. The subject property is always considered the 100 percent standard; the comparables are always treated as deviations from this norm. The two most common and acceptable adjustment techniques are

plus and minus dollar adjustments and plus and minus percentage adjustments [Crean, 1979].

After an adjusted sales price is derived for each of the comparable properties, these values are correlated to determine a final value or value range for the subject property. The greatest emphasis in weighting the individual values should be given to those comparables considered to be most like the subject property. An example is shown in Figure 7.2.

The gross income or gross rent multiplier is a simple rule-of-thumb method of estimating real estate value and is widely used in the investment field [Wendt, 1974]. It provides a general indication of the market value and is calculated as the ratio of the sales price to gross annual or monthly rent or income. This approach can be utilized in comparing similar properties with the same general characteristics and use. For example, if the monthly gross income multipliers of comparable properties falls between 100 and 120, a multiplier of 110 might be used to multiply the subject property's monthly gross income to get a rough estimate of its market value. This method should only be used as a quick check with other valuation methods in that it does not allow for different operating ratios, different vacancy rates, different ages of property, etc.

Some of the advantages of the market approach to value include [Crean, 1979, p. 270]:

1. It is the easiest of the three approaches to learn and to use.

2. It is particularly applicable to residential transactions.

3. It is the approach most easily understood by the nonprofessional.

4. It is the approach on which most courts have placed greatest reliance for reaching judgments as to market value.

5. The information developed through the market approach provides both a basis and support for judgments in the application of the cost and income approaches to value.

Some disadvantages of the market approach to value include:

1. Sales of comparables may not be frequent enough to establish a proper representative price.

2. The subject property may be so unique that no comparable properties exist.

3. Since comparable sales have taken place in the past, the appraiser must assume that the market behavior and forces of the past will continue in the future.

4. Even though properties may be comparable as to use and physical characteristics, the market conditions and terms of sale may be so different as to cause the properties not to be comparable.

5. There is always the possibility of some undue pressure having been placed upon either the buyer or the seller.

Figure 7.2 Direct Sales Comparison of Single-Family Residence

	Properties			
	A	B	C	Subject
Selling Price	$74,900	$65,000	$78,500	??
Time of Sale	Last year + 5% + $3745	Three years ago + 15% + $9750	This year	Now
Location	Poorer + $500	Equal	Better - $800	--
Architecture	Better - $800	Poorer + $1200	Equal	--
Number of Rooms	7	6 + $2000	6.5 + $800	7
Condition of Property	Equal	Poorer + $2200	Equal	--
Indicated Value	$78,345	$80,150	$78,500	$78,500

7.3 The Income Approach

The income approach is based upon the value to investors of an expected future stream of net income (and amenities) to be derived from a parcel of real estate. In order to calculate the value of the future income stream, the appraiser utilizes a process known as capitalization which converts anticipated future periodic income to value.

The income approach to value utilizes the following basic steps in converting income to value:

1. Estimate potential gross income.
2. Estimate effective gross income.
3. Estimate net operating income.
4. Determine an appropriate capitalization rate.
5. Choose an appropriate capitalization method.

In real estate appraisal, the income usually used is net operating income which is derived in the first three steps above. This income is normally capitalized on an annual basis.

Potential gross income is the income that a property will produce with 100 percent of the units rented at the market rent. Market rent is that rent which people will be willing to pay in the open market. It is important for the potential investor to realize that this rent may be different from what tenants are currently paying.

There are three basic characteristics that must be considered in estimating including the quantity, quality and durability of the rental income. The quantity of income defines the amount to be expected based on the past and

present performance of the property, rentals being earned on comparable properties, and the amount of rent which present and prospective tenants are justified in paying. The quality and earning capacity of the tenants define the quality of the projected rental income. The durability of the projected income is a function of how long the investor can anticipate receiving the projected income. Durability can be enhanced, for example, by a well written, long-term lease with rent escalation clauses.

Effective gross income is the potential gross income less an estimate for vacancy and rent loss plus other income to be derived from the property. The allowance for vacancy and rent loss should be based on the past performance of the subject property as well as the performance of comparable properties in the market. This amount is commonly expressed as a percentage of potential gross income and can then be converted to a dollar amount.

Net operating income is the effective gross income less all expenses attributable to the operation of the property. A typical classification of expense categories might include: fixed expenses such as property taxes and insurance; operating expenses such as utilities, cleaning, painting, alterations, supplies, trash removal, general payroll, and miscellaneous; management, maintenance and repairs; and replacement reserves to provide for replacing appliances, furniture, carpet, roofs, equipment, etc.

The appraiser must forecast the future net operating income and then convert or capitalize to determine the present worth or value of the investment property. The best starting point is the current and past operating statements for the subject and comparable properties. The anticipated future expenses must also be forecast and deducted from the anticipated future effective gross income to determine the anticipated future net operating income.

A capitalization rate is the sum of a discount rate and a capital recapture or recovery rate. It is important to distinguish the capitalization rate from the overall rate which is a ratio of the annual net operating income over the property value (or sales price).

The discount rate is the annual market competitive rate of return on invested capital. It is the rate necessary to compensate the investor for all the inherent risks associated with a particular investment. It can be viewed as being comprised of two separate components. First, it includes the riskless rate or the safe rate which is the rate of return an investor could earn on an investment considered to have minimum risk and maximum safety such as Treasury securities or an insured savings account. Second, it includes additional percentage rates of return to compensate the investor for the risks in the investment. In the case of real estate this would include the risks discussed in Chapter Five.

The capital recapture rate is the return of total invested capital expressed as an annual rate. In real estate

investments, the proceeds upon resale (or reversion) may be equal to, more than, or less than the amount of originally invested capital. If the property is estimated to maintain value, then all of the recapture or return of capital is in the reversion. If the property is estimated to appreciate, then the reversion includes the return of the capital as well as some of the return on the capital. If the property is estimated to depreciate over its investment life, then only part of the recapture or return of capital is in the reversion and the balance must come out of the yearly net operating income.

There are a number of methods available to convert income to value. Each appraisal problem must be taken as a separate case with the best technique selected based on the availability and certainty of information and estimates.

In carrying out the income approach, several variables must be considered, all of which constitute inputs to the basic value formula that:

$$V = I / R$$

where V = value; I = income; and R = relationship between value and income, normally the overall rate or the capitalization rate. For example, assume that a 12 percent overall rate has been derived from the ratios of net operating incomes to the sales prices of comparable investment properties. If the subject property's stabilized annual net operating income is estimated to be $100,000, the value of the property would be estimated to be $833,333

($100,000 / .12). In this method there is no estimate as to the quality or durability of income as well as no estimate of the capital recapture period. However, this method is very simple and can be considered quite convincing where there are sufficient open market sales of comparable properties to prove that the overall rate is truly representative of the market.

Estimating the market value of a property using the building residual technique requires the appraiser to estimate the remaining economic life of the building and the value of the site. The rate of return on properties similar to the subject property can be ascertained from the market. For example, assume for the subject property that the remaining economic life is 30 years, the value of the land is $40,000 the annual estimated net operating income is $25,000, and the rate of return is 10 percent. The value of the property is calculated as follows. The annual income required to support the land value would be the site value ($40,000) times the capitalization rate (.10) yields $4,000. This is subtracted from the net operating income to provide an income residual of $21,000 attributable to the building. The building's income is capitalized into present value using the level annuity factor at 10 percent. The value of the building is then calculated by taking this remainder and multiplying it by (9.427) the present value of an annuity factor of one dollar, at 10 percent for 30 years. This provides a building value of $197,968 and a property value of $237,968 (including the land valued at $40,000).

The site residual technique can be used when new or almost new improvements exist, that is, improvements which have not been reduced in value due to depreciation and which represent the highest and best use of the land. Using the assumptions made above for the building residual technique and assuming the value of the improvements to be $197,968, the value of the property is calculated as follows. The income required to support the building value is found by taking the assumed building cost of $197,968 and dividing this by the present value of annuity factor of one dollar at 10 percent for 30 years (9.427) which yields $21,000. This is subtracted from the estimated net operating income of $25,000 per year to yield an income residual to the site of $4,000. The value of the site is then calculated by dividing the income residual to the site ($4,000) by the capitalization rate of the land (10 percent) to yield a land value of $40,000. When added to the value or cost of the building, yields a property value of $237,968 [Smith, 1981].

CHAPTER EIGHT
APARTMENT BUILDING ANALYSIS

8.1 Investment Characteristics of Apartments

Population and income levels are the primary determinants of value for residential real estate. Location also plays a major role in terms of the environment and convenience offered. In addition, status and prestige also play a role in the value of some apartment buildings as they relate to the principle of value as a function of supply and demand.

Apartments also require a moderate amount of active attention as an investment. In addition, the market tends to be broader and apartments tend to be more liquid than other real estate investments because investors tend to be more knowledgeable in residential properties than in other types of real estate investments. Also in the recent past loan-to-value ratios of 90 percent and higher have been available which offers investors high leverage on the equity invested. Under current tax laws, accelerated depreciation is available for recently purchased properties. The rate of return is realized both through periodic income subject to ordinary gains tax and appreciation of property value subject to the more generous capital gains taxation.

The major risks associated with apartment investment are realized during the start up period for new properties and in providing quality management on a continuous basis. For larger complexes professional management is a must to avoid harassment from tenants and others and to properly maintain the property and therefore its value [Ring, 1981].

Investors in the higher tax brackets are in a better position to benefit from the income deductions allowed for accelerated depreciation. However, smaller properties of up to twelve units may be adequately managed by the owner with a good return on his investment capital.

8.2 A Case Study

The following case study is provided to illustrate the calculation of rate of return on investment. The project selected for analyzing was the Country Garden Apartments, Gainesville, Florida. The property was listed and advertised by Coldwell Banker Commercial Real Estate Services, Inc. in 1985. Where possible, information regarding the investment was taken from the sales offering summary. Where necessary information was not provided, estimates were made.

The Country Garden Apartments were built in 1971. Construction is two story garden style, brick and paneled buildings. The units are dispersed over seven buildings and are comprised of 49 one-bedroom, one-bath and 49 two-bedroom, two-bath units.

The purchase price was $3,000,000. A 90 percent loan to value ratio is assumed which requires a down payment of $300,000. Closing costs are assumed to be $40,000. The property value is expected to appreciate at a rate of four percent per year.

Financing includes a 30 year mortgage amortization at 12 percent annual interest. The points assessed (3 points) and closing costs are able to be financed over the term of the

mortgage. This provides an initial loan amount of $2,822,000.

The gross annual rental income at end of year one with two percent vacancy was calculated to be $411,043. The income is estimated to increase at a rate of 4 percent per year. This income provided an annual gross rent multiplier of 7.3.

Expenses were assumed as $137,700 per year based on the previous year's records. They are estimated to increase at an average rate of 5 percent per year.

Depreciation is figured at the current IRS approved accelerated method of 175 percent declining balance over a period of 18 years. The land value was estimated at $500,000.

The return on investment is calculated and shown for a five year holding period.

Figure 8.1 Income Schedule

49 1BR @ $295 per month	$173,460
49 2BR @ $385 per month	226,380
	$399,840
Less historical 2% vacancy rate	7,997
	$391,843
Laundry Machines	13,000
Miscellaneous Income	2,200
Security Forfeitures	4,000
Effective Gross Annual Income	$411,043

Figure 8.2 Expense Schedule

Advertising and Printing	$ 2,000
Insurance	4,000
Licenses and Taxes	200
Management Fee	11,700
Miscellaneous Expenses	500
Office Expenses	600
Payroll	30,000
Payroll Taxes	2,700
Pest Control	2,200
Real Estate Taxes	29,000
Maintenance and Repair	8,000
Replacement Reserves	12,000
Supplies	9,000
Telephone	1,500
Trash removal	3,100
Utilities - Electric	5,000
Utilities - Water	15,000
Utilities - Gas/Oil	1,200
Total Expenses	$137,700
Net Operating Income	$273,343

Figure 8.3 Income and Expense Growth

End of Year	Income Growth @ 4%	Expense Growth @ 5%	NOI
1	$411,043	$137,700	$273,343
2	427,485	144,585	282,900
3	444,584	151,814	292,770
4	462,367	159,405	302,962
5	480,862	167,375	313,487

Figure 8.4 Interest and Amortization Schedule

End of Year	EOY Loan Balance	Amortization	Interest
0	$2,822,200	-	-
1	2,810,506	$11,694	$338,664
2	2,797,408	13,097	337,261
3	2,782,739	14,669	335,689
4	2,766,310	16,430	333,929
5	2,747,909	18,401	331,957

Figure 8.5 Real Property Depreciation Schedule

Year	Depreciable Basis	Depreciation Allowance
1	$2,500,000	$243,056
2	2,256,945	219,425
3	2,037,519	198,092
4	1,839,427	178,833
5	1,660,594	161,447

Total Depreciation = $1,000,853
EOY 5 adjusted basis = purchase price + closing costs less depreciation
= $2,039,147
Straight line depreciation = $833,333
Recapture depreciation = $167,520

Figure 8.6 Taxable Income

	Tax savings or Tax Payable				
Year	1	2	3	4	5
NOI	$273,343	$282,900	$292,770	$302,962	$313,487
Mortgage Interest	(338,664)	(337,261)	(335,689)	(333,929)	(331,957)
Depreciation	(243,056)	(219,425)	(198,092)	(178,833)	(161,447)
Taxable Income	(308,377)	(273,786)	(241,011)	(209,800)	(179,917)
Marginal Tax Rate	0.50	0.50	0.50	0.50	0.50
Tax Savings	$154,189	$136,893	$120,506	$104,900	$ 89,959
Tax Payable	-	-	-	-	-

	After Tax Cash Flow				
Year	1	2	3	4	5
NOI	$273,343	$282,900	$292,770	$302,962	$313,487
Loan Payments	(350,358)	(350,358)	(350,358)	(350,358)	(350,358)
Before Tax Cash Flow	(77,015)	(67,458)	(57,588)	(47,396)	(36,871)
Tax Savings	154,189	136,893	120,506	104,900	89,959
Tax Payable	-	-	-	-	-
After Tax Cash Flow	$77,174	$69,435	$62,918	$57,504	$53,088

Figure 8.7 Net Reversion

Tax on Excess Depreciation	
Total Depreciation Taken	$1,000,853
Allowable Straight-line Depreciation	(833,333)
Excess Depreciation	167,520
Marginal Tax Rate	0.50
Tax on Excess Depreciation	$ 83,760
Tax on Capital Gain	
Sale Price (@ 4% Appreciation)	$3,649,959
Sales Costs (@ 4%)	(145,998)
Net Sales Price	$3,503,961
Adjusted Basis	(2,039,147)
Excess Depreciation	(167,520)
Capital Gain	$1,297,294
Percent Gain Reportable	0.40
Amount of Gain Taxed	$ 518,918
Marginal Tax Rate	0.50
Tax on Capital Gain	$ 259,459
Net Reversion	
Sales Price	$3,649,959
Sales Costs	(145,998)
Mortgage Balance	(2,747,909)
Tax on Capital Gain	(259,459)
Tax on Excess Depreciation	(83,760)
Net Reversion	$ 412,833

Figure 8.8 Rate of Return

Year	After-Tax Cash Flow	Year's Growth	Future Value Factor	ATCF Future Value Reinvested @ 10%
0	$(300,000)			
1	77,174	4	1.4641	$112,990
2	69,435	3	1.3310	92,418
3	62,918	2	1.2100	76,131
4	57,504	1	1.1000	63,254
5	53,088	0	1.0000	53,088
5	412,833	0	1.0000	412,833
				$734,584

Initial Outlay	$(300,000)
Future Value	734,584
After Tax Rate of Return	19.58%

CHAPTER NINE
SUMMARY

When one considers real estate as an investment, one will soon realize that real estate and its related businesses and professions encompass a very large industry, if not the largest of all industries in human history. It has been estimated that approximately two-thirds of the total wealth in the United States economy consists of real estate [Crean, 1979].

More and more investors have become dissatisfied with the yields on customary investments in stocks and bonds and have been giving real estate investment additional consideration. With the securities and market operations becoming more complex, many have found that real estate investing requires no more technical knowledge than do modern security investments [Ferguson, 1982]. In addition, real estate generally did a better job of keeping up with inflation than did most securities investments during the 1970's.

For the past few decades apartment buildings have been the most often built, appraised, purchased, owned, and sold type of real estate other than owner-occupied dwellings and raw land. They have probably produced more millionaires than any other type of real estate investment [O'Connell, 1982].

Real estate investing, however, is not for everyone. Successful investing does require some basic knowledge of the forces that affect the value of real estate, economic considerations and cash flow analyses, legal aspects of

purchase and ownership, and crucial tax considerations which are currently applicable. There are distinct advantages and disadvantages to real estate investment and these will differ from individual to individual depending upon their particular circumstances, objectives and desires. The key topics addressed in this report as well as the basic analytical tools required for decision making provide the basis necessary for introduction to real estate investing for the first time investor. A comprehensive check list for additional considerations for apartment investment is provided at Appendix B. The risks associated with real estate can be greater than other common types of investments, but the rewards, in general, have risen concomitant with the risk.

In performing real estate investment analyses it is important to remember that the three main considerations in real estate decisions are location, location, and location [Weimer, 1972]. Valuations, appraisals and analyses are important aids in real estate decisions. They provide the information and forecasts necessary to allow the investor to make better decisions. It is essential to remember that they provide one of the major bases for reaching a decision, but they do not make the decision.

1985 Tax Rate Schedules

Your zero bracket amount has been built into these Tax Rate Schedules.

Caution: You must use the Tax Table instead of these Tax Rate Schedules if your taxable income is less than $50,000 unless you use Schedule G, Income Averaging, to figure your tax. In that case, even if your taxable income is less than $50,000, use the rate schedules on this page to figure your tax.

Schedule X

Single Taxpayers

Use this Schedule if you checked **Filing Status Box 1** on Form 1040—

If the amount on Form 1040, line 37 is: Over—	But not over—	Enter on Form 1040, line 38	of the amount over—
$0	$2,390	—0—	
2,390	3,540	.....11%	$2,390
3,540	4,580	$126.50 + 12%	3,540
4,580	6,760	251.30 + 14%	4,580
6,760	8,850	556.50 + 15%	6,760
8,850	11,240	870.00 + 16%	8,850
11,240	13,430	1,252.40 + 18%	11,240
13,430	15,610	1,646.60 + 20%	13,430
15,610	18,940	2,082.60 + 23%	15,610
18,940	24,460	2,848.50 + 26%	18,940
24,460	29,970	4,283.70 + 30%	24,460
29,970	35,490	5,936.70 + 34%	29,970
35,490	43,190	7,813.50 + 38%	35,490
43,190	57,550	10,739.50 + 42%	43,190
57,550	85,130	16,770.70 + 48%	57,550
85,130	.....	30,009.10 + 50%	85,130

Schedule Z

Unmarried Heads of Household

(including certain married persons who live apart—see page 5 of the instructions)

Use this schedule if you checked **Filing Status Box 4** on Form 1040—

If the amount on Form 1040, line 37 is: Over—	But not over—	Enter on Form 1040, line 38	of the amount over—
$0	$2,390	—0—	
2,390	4,580	.....11%	$2,390
4,580	6,760	$240.90 + 12%	4,580
6,760	9,050	502.50 + 14%	6,760
9,050	12,280	823.10 + 17%	9,050
12,280	15,610	1,372.20 + 18%	12,280
15,610	18,940	1,971.60 + 20%	15,610
18,940	24,460	2,637.60 + 24%	18,940
24,460	29,970	3,962.40 + 28%	24,460
29,970	35,490	5,505.20 + 32%	29,970
35,490	46,520	7,271.60 + 35%	35,490
46,520	63,070	11,132.10 + 42%	46,520
63,070	85,130	18,083.10 + 45%	63,070
85,130	112,720	28,010.10 + 48%	85,130
112,720	.....	41,253.30 + 50%	112,720

Schedule Y

Married Taxpayers and Qualifying Widows and Widowers

Married Filing Joint Returns and Qualifying Widows and Widowers

Use this schedule if you checked **Filing Status Box 2 or 5** on Form 1040—

If the amount on Form 1040, line 37 is: Over—	But not over—	Enter on Form 1040, line 38	of the amount over—
$0	$3,540	—0—	
3,540	5,720	.....11%	$3,540
5,720	7,910	$239.80 + 12%	5,720
7,910	12,390	502.60 + 14%	7,910
12,390	16,650	1,129.80 + 16%	12,390
16,650	21,020	1,811.40 + 18%	16,650
21,020	25,600	2,598.00 + 22%	21,020
25,600	31,120	3,605.60 + 25%	25,600
31,120	36,630	4,985.60 + 28%	31,120
36,630	47,670	6,528.40 + 33%	36,630
47,670	62,450	10,171.60 + 38%	47,670
62,450	89,090	15,788.00 + 42%	62,450
89,090	113,860	26,976.80 + 45%	89,090
113,860	169,020	38,123.30 + 49%	113,860
169,020	.....	65,151.70 + 50%	169,020

Married Filing Separate Returns

Use this schedule if you checked **Filing Status Box 3** on Form 1040—

If the amount on Form 1040, line 37 is: Over—	But not over—	Enter on Form 1040, line 38	of the amount over—
$0	$1,770	—0—	
1,770	2,860	.....11%	$1,770
2,860	3,955	$119.90 + 12%	2,860
3,955	6,195	251.30 + 14%	3,955
6,195	8,325	564.90 + 16%	6,195
8,325	10,510	905.70 + 18%	8,325
10,510	12,800	1,299.00 + 22%	10,510
12,800	15,560	1,802.80 + 25%	12,800
15,560	18,315	2,492.80 + 28%	15,560
18,315	23,835	3,264.20 + 33%	18,315
23,835	31,225	5,085.80 + 38%	23,835
31,225	44,545	7,891.00 + 42%	31,225
44,545	56,930	13,488.40 + 45%	44,545
56,930	84,510	19,061.65 + 49%	56,930
84,510	.....	32,575.85 + 50%	84,510

Source: 1985 Internal Revenue Service Form 1040

APPENDIX B
CHECK LIST FOR MULTIFAMILY PROJECT

I. Metropolitan Area
   - A. Population
     1. Last census count
     2. Latest estimate
     3. Latest projections
   - B. Distance of Property to Vital Locations
     1. To downtown area
     2. To nearest shopping mall
     3. To nearest main traffic artery
     4. To nearest school
     5. To nearest public transit
   - C. Employment statistics
     1. Percent of workforce employed
     2. Employment by major function (industry, service, etc.)
     3. Percent change in unemployment over last several years
     4. Employment projections (if available)
   - D. Income statistics
     1. Median individual income
     2. Median household income
     3. Average individual income
     4. Average household income
     5. Percentage of households above $50,000 income
     6. Percentage of households below $12,000 income
     7. Percentage of two-worker households
   - E. Educational Facilities
     1. Number of elementary, junior-high, and senior-high schools
     2. Number of community colleges
     3. Number of technical training centers
     4. Number of colleges or universities
     5. Enrollment figures
   - F. Housing Statistics
     1. Number of single-family homes
     2. Number of apartment units
     3. Present vacancy level of apartment units
     4. Number of apartment units under construction
     5. Projected needs for housing units
     6. Average cost of new home
     7. Rental income schedule by number of rooms

II. Property Data
   - A. Description of Most Likely Tenants
     1. Age
     2. Employment
     3. Marital Status
     4. Income levels
   - B. Nearest Community Amenities
     1. Theaters, museums, etc.
     2. Restaurants
     3. Parks

C. Household Income within Census Tract
D. Major Employer of Present Residents or Tenants within Tract
E. Proposed Rental Schedule for Property
F. Tax Information
    1. Tax rate per $100 valuation
    2. Present assessed value
    3. Special Assessments
    4. Average rate of tax increase
G. Utility Information
H. District Zoning
    1. Zoning Classification
    2. Recent changes
    3. Percentage of nonconforming uses

III. Market Conclusions and Recommendations

Source: [Ferguson, 1984, p.296]

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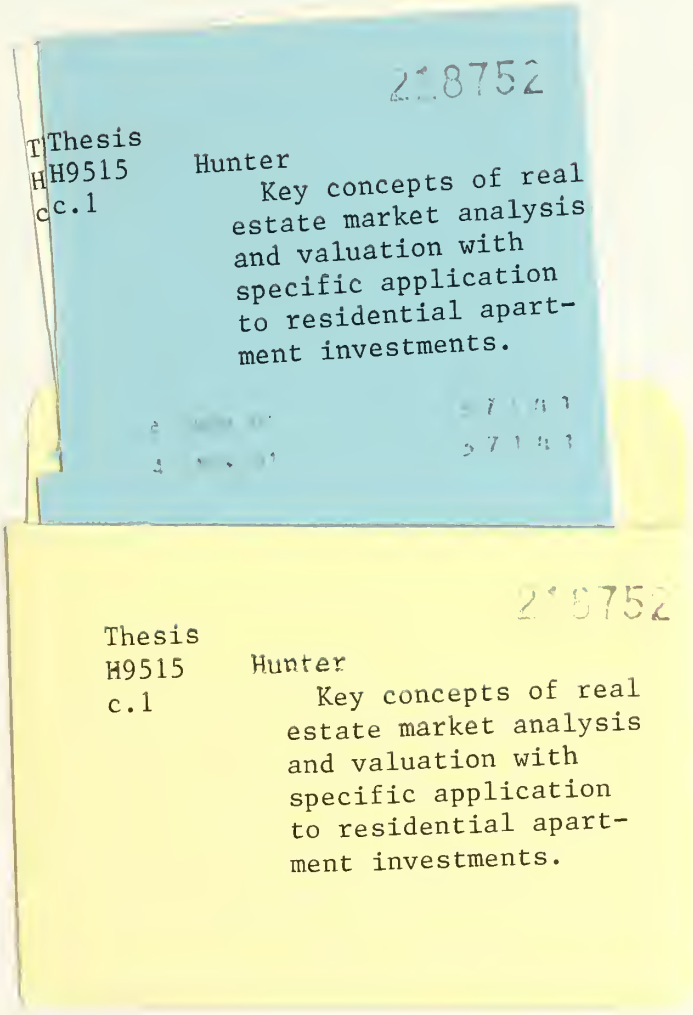
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